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Finance, Inequality and Poverty:

Cross-Country Evidence

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Abstract: While substantial research finds that financial development boosts overall economic growth, we study whether financial development is pro-poor: Does financial development disproportionately raise the income of the poor? Using a broad cross-country sample, we find that the answer is yes: Financial intermediary development reduces income inequality by disproportionately boosting the income of the poor and therefore reduces poverty. This result is robust to controlling for simultaneity bias and reverse causation.

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I. Introduction

Stunningly high levels of poverty and income inequality characterize much of the world. In 1998, 1.2 billion people lived worldwide on less than $400 per annum. During the 1990s, the poorest 20% of the population in the average country received less than 6% of the nation's Gross Domestic Product (GDP). While previous cross-country research has shown that the poor gain as much from economic growth as the remainder of the population (Dollar and Kraay, 2002) and that growth in average income accounts for the largest share of the reduction in poverty over the last decades (Kraay, 2003), case studies indicate that the linkages among growth, poverty, and income distribution are complex (Ferreira and Paes de Barros, 1998). Besley and Burgess (2003), Bourguignon (2004) and Ravallion (2001) illustrate the relationships between poverty, growth and inequality, providing examples of how both growth and inequality changes influence poverty.

Besley and Burgesss (2003) calculate that a GDP per capita growth rate of 3.8% in developing countries would be required to achieve the Millennium Development Goal of cutting poverty by half by 2015; which is more than double the actual growth rate over the period 1960 to 1990. These same authors also argue that a one standard deviation decline in inequality would cut poverty by almost half in Latin America and by more than half in Sub-Saharan Africa. These calculations illustrate that both aggregate growth and changes in inequality represent two mechanisms for reducing poverty. These calculations also emphasize the importance of identifying policies that not only boost aggregate growth but that are also pro-poor, in that they disproportionately benefit the poor.

The recent empirical growth literature has focused on policies that foster average

GDP per capita.[1] However, growth-enhancing policies can have distributional effects; they can raise average income by (i) raising everyone's income, (ii) raising primarily incomes of the rich, or (iii) raising primarily incomes of the poor. If pro-growth policies are also pro-poor, their poverty alleviation impact can be much greater. This paper focuses on one specific policy area – financial intermediary development – and its effect on income inequality and poverty alleviation.

A burgeoning empirical literature over the last decade finds that financial development exerts a first-order impact on long-term economic growth. But does the whole population participate in the benefits of financial development or are these benefits limited to a select few? While some theories hold that financial intermediaries help extend access to financial services, thus assisting firms to overcome indivisible investment constraints and fostering competition and equality, others posit that it is the rich who stand to benefit most from financial deepening.

Using a broad sample of 52 developing and developed countries, with data averaged over the period 1960 to 1999, this paper assesses whether there is a direct relationship between financial intermediary development and changes in income distribution. This relationship is crucial in understanding the linkage between financial development and poverty alleviation since poverty reduction in any given country is determined by the growth of mean income and changes in income distribution. Given that there is already significant evidence that financial development is pro-growth, we seek to determine whether financial development is also pro-poor. By pro-poor, we mean does financial development significantly improve income distribution by disproportionately boosting the incomes of the poor? To capture changes in income

[1] See, the Handbook of Economic Growth (Aghion and Durlauf, 2005).

distribution, we use the growth rates of (i) income of the poorest quintile, (ii) the Gini coefficient, and (iii) the standard deviation of income distribution. To test whether financial development boosts income growth of the poor more than the average, we examine the relationship between finance and income growth of the poor while controlling for average income growth.

Our results indicate that finance is pro-poor. The income of the poorest quintile grows faster than average GDP per capita in countries with better-developed financial intermediaries. Income inequality, measured both by the Gini coefficient and the standard deviation, falls more rapidly in countries with higher levels of financial intermediary development. These results are robust to controlling for endogeneity.

Finally, as a robustness test we also investigate the direct relationship between financial intermediary development and two indicators of social improvement. We are able to replicate our results when we look at infant mortality. Countries with better-developed financial intermediaries have seen larger reductions in infant mortality. This relationship is robust to controlling for endogeneity. When we examine school enrollment rates, we find a strong, positive relationship between financial intermediary development and increases in child enrollment in primary schools, but this relationship becomes insignificant when using instrumental variables.

Our paper is related to a small, but growing literature assessing the determinants of income inequality, including Li, Squire and Zou (1998), Li, Xu and Zou (1999), Gallup, Radelet and Warner (1998), Lundberg and Squire (2003), Foster and Szekely (2001) and Clarke, Xu and Zou (2003). Particularly relevant is Clarke et al. (2003). They assess the relationship between financial intermediary development and levels of

income inequality. Unlike them, however, we consider the relationship between financial intermediaries and the changes in inequality, and thus link our analysis directly to income growth of the poor and poverty alleviation. Our paper is also related to Honohan (2004a, b) who considers the relationship between financial development and levels of absolute poverty.

Our paper is also related to recent work that analyzes the link between financial development and child labor. In a cross-country sample, Dehejia and Gatti (2002) find that the incidence of child labor is lower in countries with greater financial depth and that financial deepening dampens the impact of income volatility on child labor. Similarly, using a panel dataset of Tanzanian households, Beegle, Dehejia and Gatti (2003) find that child labor is used to buffer transitory income shocks less when households have access to credit. Jacoby (1994) shows for a sample of Peruvian households that greater borrowing constraints reduce primary school attendance.

While our results are robust to different specifications, our analysis faces several limitations. First, we use cross-country regressions, so the results are subject to the usual criticisms of cross-country studies (Levine and Zervos, 1993): some observers hold that countries are so different that they cannot be viewed as being drawn from the same population and therefore reject the validity of cross-country regressions; others stress that averaging data over time eliminates time-series information and does not allow one to adequately control for country-specific effects. Second, our indicator of financial intermediary development is an aggregate measure that captures the amount of savings intermediated to private borrowers relative to GDP. It does not measure the degree to which the population in general or the poor in particular access financial services. We

see our analysis, therefore, as a first step before better data on access to financial services is constructed. Third, income distribution is measured with error (Lundberg and Squire, 2003; Dollar and Kraay, 2002). However, this would bias our regressions against finding any significant relationships. Finally, while our results show the importance of financial intermediaries for the poor, they are silent on how to foster financial intermediary development and to broaden access to financial services, which is the focus of a companion literature.[2] Future work needs to examine the link between particular policies toward the financial sector and the pro-poor nature of financial intermediation.

The remainder of the paper is organized as follows. Section II discusses different hypotheses concerning the relationship between financial intermediary development and changes in income distribution and poverty. Section III presents the data and methodology. Section IV presents the results and section V concludes.

II. Existing Literature

The finance and growth literature has focused on the relationship between financial development and aggregate economic growth of societies, as proxied mostly by the growth rate of real per capita GDP. Less effort has been expended on studying the differential effects of finance on different segments of societies. Financial development, however, might have distributional effects. Specifically, consider the income of the lowest income quintile, y_P, which can be written as a function of average GDP per capita y and the Lorenz curve L, which relates the share of the population to the share of income received:

[2] For instance, on bank supervision, see Barth, Caprio, and Levine, 2004, 2005; Beck, Demirguc-Kunt, and Levine 2004a,b; Demirguc-Kunt, Laeven, and Levine 2005; and Caprio, Laeven, and Levine 2004).

$$y_p = y * L(0.2) / 0.2$$

Differentiating yields

$$y_{p,t} - y_{p,t-1} = (y_t - y_{t-1}) + (L(0.2)_t - L(0.2)_{t-1})$$

While the term in the first parenthesis on the right hand side captures the overall growth component, the term in the second parenthesis captures the distributional component of income changes in the lowest income quintile. While the finance and growth literature has extensively analyzed the relationship between financial development and this first component, considerably less effort has been expended analyzing the effect of finance on the distributional component.

The relationship between finance and income inequality is also relevant for reducing absolute poverty. An arithmetic identity links average growth and changes in income distribution with poverty alleviation (Bourguignon, 2004):

$$P_t - P_{t-1} = Fn[(y_t - y_{t-1}), (L_t - L_{t-1})]$$

where P is an indicator of poverty incidence. What has come to be known as the Poverty-Growth-Inequality Triangle illustrates that poverty reduction in an economy is determined by the rate of growth and changes in income distribution.

Theory provides different hypotheses concerning the relationship between financial deepening and movements in relative income shares. Some theories claim that financial intermediary development is pro-poor. Banerjee and Newman (1993), Galor and Zeira (1993) and Aghion and Bolton (1997) show that credit constraints are particularly binding on the poor. These credit constraints, therefore, represent a particularly high barrier to the ability of the poor to exploit investment opportunities. This produces higher income inequality in economies with higher credit constraints, i.e., in economies with

lower levels of financial development. By allowing more entrepreneurs access to external finance, financial intermediary development enables them to overcome the barriers of indivisible investments (McKinnon, 1973). Financial intermediaries are especially important for small and opaque firms, since effective and developed intermediaries are in a better position to overcome problems of asymmetric information and adverse selection (Petersen and Rajan, 1995). On a more general level, political theories of financial deepening posit that deeper and more competitive financial markets enable access of larger parts of the population beyond the incumbents and the rich (Rajan and Zingales, 2003). Developed, competitive financial intermediaries foster economy-wide competition and openness by (i) facilitating the entry of new enterprises and (ii) reducing the dependence of new entrants on personal wealth and political connections.

For financial intermediaries to have a positive impact on income distribution, not all income groups have to have equal access to credit. First, it is important to distinguish between the need for financial services, and demand, which by definition should guarantee a reasonable return for financial intermediaries at a market-based and risk-adjusted price. Second, just because the loan is made to a rich or wealthy person does not mean it will worsen income distribution, especially if the loan resources are put to the most productive use and other markets – input and output markets – are competitive. Rather, it is important that financial services are accessible for most productive uses, independent of initial wealth and political and business connections.

Other theories question whether financial services become more accessible as financial markets deepen and hold that it is mostly the incumbents and connected who benefit from financial deepening. Especially at early stages of financial deepening,

access to financial services, especially credit, is limited to wealthy incumbents and politically connected (Lamoreaux, 1986; Haber 1991; Maurer and Haber, 2003) and will thus raise their incomes relative to the incomes of the poor. While financial intermediaries have an important role in mobilizing savings and fostering capital accumulation, in this case resources are not allocated to their most productive use. In countries with powerful governing elites, financial deepening will therefore lead to less rather than more competitiveness and primarily help rich insiders at the expense of the lower and middle-income groups.

Other models, still, posit a non-linear relationship between finance and income distribution. Building on the Kuznets hypothesis, Greenwood and Jovanovic (1990) show how the interaction of financial and economic development can give rise to an inverted U-shaped curve of income inequality and financial intermediary development. While at an early stage of financial development, it is only the rich who have access to financial markets and thus the opportunity to invest in high-risk, high-return projects, over time, access will expand to poorer segments of the population. The distribution effect of financial deepening is thus adverse for the poor at early stages, but positive after a turning point.

Given the poverty-growth-inequality identity and the literature on finance and growth, if our results show that financial development benefits the poor or has no significant impact on the relative income of the poor, then it would be possible to conclude that financial development reduces poverty. If, however, our results indicate that financial development negatively affects income distribution, the impact of finance on poverty alleviation is less clear. We will test these hypotheses below.

III. Data and Methodology

This section describes the variables and the methodology we will be using to assess the relationship between financial intermediary development and poverty alleviation.

A. Indicator of Financial Intermediary Development

To evaluate the impact of financial intermediaries on changes in income distribution, we seek an indicator of the ability of financial intermediaries to *research and identify profitable ventures, monitor and control managers, ease risk management, and facilitate resource mobilization.* Ideally, we would like to have an indicator that captures both the depth and the breadth of financial intermediation in a society. We do not have a direct measure of these financial services, especially not of the access to and thus breadth of financial services. We therefore rely on a traditional measure of financial intermediary development that has been used extensively in the finance and growth literature.

PRIVATE CREDIT equals the value of credit by financial intermediaries to the private sector divided by GDP. This measure excludes credits issued by the central bank and development banks. Furthermore, it excludes credit to the public sector and cross claims of one group of intermediaries on another. PRIVATE CREDIT is thus a comparatively comprehensive measure of credit issuing intermediaries since it includes the credits of financial intermediaries that are not considered deposit money banks. Levine, Loayza and Beck (2000) and Beck, Levine, and Loayza (2000) show a robust causal link from Private Credit to GDP per capita and productivity per capita growth. Our data on Private Credit are from the updated version of the Financial Structure Database

(Beck, Demirguc-Kunt and Levine, 2001). There is a wide variation in financial intermediary development across countries, ranging from 5% in Sierra Leone to 149% in Hong Kong, as averaged over the period 1960-99.

B. Indicators of income distribution and poverty alleviation

We use the income share of the **lowest income quintile**, the **Gini coefficient** and the **standard deviation** of the income shares as indicators of income distribution.[3] While the income share of the lowest income quintile is a more limited indicator of income distribution than the Gini coefficient and the standard deviation, which capture the whole Lorenz curve, empirically the log of the income share of the lowest income quintile is an almost exactly linear function of the Gini coefficient (Dollar and Kraay, 2002).

Our data on the Gini coefficient, its standard deviation, and the income share of the lowest income quintile are from Dollar and Kraay who construct these data from various sources. We also use their estimates for GDP per capita growth from the extended version of the Summers-Heston Penn World Tables 5.6. Unlike Dollar and Kraay, we estimate pure cross-country regressions, impose the restriction that there is at least 20 years difference between the first and last observation on the income share, and thus we have one observation per country, rather than a panel. We therefore use the first and last observation from the Dollar and Kraay database, mostly from the 1960s and 1990s respectively, and use data on GDP per capita growth and Private Credit for the same time period. Given the different data restrictions, our final sample consists of 52

[3] The Gini coefficient is defined as the ratio of area between the Lorenz curve, which plots the share of population against income share received, and the diagonal to the area below the diagonal. Assuming that the income distribution is lognormal, its standard deviation is given by $\sigma = (2)^{0.5} * \Phi^{-1}[(1+G/100)/2]$ where G denotes the Gini coefficient and Φ the cumulative normal distribution function (Dollar and Kraay, 2002 and Besley and Burgess, 2003). The income share of the lowest income quintile is then given by $\Phi(\Phi^{-1}(0.2) - \sigma)$.

developing and developed countries, for which we present data on all variables of interest in Table 1.

As can be seen from Table 1, there is a wide variation in the change of income distribution within our sample, measured by all three indicators of income distribution.[4] The annual growth rate of lowest income quintile, averaged over the period 1960-99, ranges from –7.7 percent in Sierra Leone to 6.6 percent in Korea. The Gini coefficient and standard deviation of the income distribution decreased by 2 percent, on an annual basis, in Finland, but increased by more than one percent annually, in Ecuador, during the same time period.

As robustness test, we also explore if financial intermediary development has a direct effect on social indicators. We use changes in **infant mortality** to proxy for improvement in social services. We have data available for 99 countries over the period 1960 to 1999. The largest change in infant mortality was in Korea, a reduction of 7 percent on an annual basis, with the lowest being almost zero in Nigeria and Zambia. We use the **primary net enrollment rate** to measure human capital accumulation at its most basic level.[5] Data for net enrollment are available for 1970 to 1999.[6] Primary net enrollment decreased by 2.6 percent, on an annual basis, in Congo Democratic Republic and increased by almost 4.5 percent, on an annual basis, in Burkina Faso.

C. Descriptive statistics and correlations

Panel A of Table 2 presents descriptive statistics and Panel B presents correlations

[4] Levels of inequality and social indicators are given in the appendix Table A1.
[5] We use net rather than gross enrollment rates, since the latter also includes adults. By focusing on child enrollment rates, we can link our results closer to the micro literature considering the effect of credit constraints on child labor and school attendance [Dehejia and Gatti, 2002; Beegle, Dehjia and Gatti, 2003; and Jacoby, 1994].
[6] For both infant mortality and net enrollment rate, we impose a minimum requirement of 20 years between initial and final value to include the country in the sample.

between the different measures of changes in income distribution and social indicators and Private Credit. Consistent with earlier work, financial intermediary development is positive and significantly correlated with GDP per capita growth rate. It is also positively and significantly correlated with the income growth of the poor and reductions in income inequality, both measured by Gini and the standard deviation. Looking at changes in social indicators, financial development is significantly correlated with reductions in infant mortality. However, surprisingly, Private Credit is also negatively correlated with the growth in primary net enrollment, although only at the 10% significance level. GDP per capita growth, the income growth of the poor and reductions in infant mortality are also significantly correlated with each other, while changes in net enrollment are only significantly correlated with changes in infant mortality, but again surprisingly with a positive sign.[7]

D. Methodology

We first evaluate the impact of financial development on income growth of the poorest income quintile. To do this, we average available data over the period 1960-99 and utilize the following regression:

$$(y_{i,p,t} - y_{i,p,t-n})/n = \alpha y_{i,p,t-n} + \beta FD_i + \gamma X_i + \varepsilon_i, \qquad (1)$$

where $y_{i,p,t}$ is the log of real GPD per capita of the poorest income quintile in country i in year t, FD is Private Credit and X is a set of conditioning information.[8] The time period n is at least 20 years, which reduces our sample to 52 countries. We follow previous

[7] One explanation may be the highly positive and significant correlation between infant mortality and population growth rates. Higher population growth is also associated with higher enrollment growth. Where child labor is common, having more siblings may increase the odds of each child's primary school enrollment.

[8] In line with the finance and growth literature we include Private Credit in logs to control for non-linearities in the relationship.

studies on the finance-growth relationship and control for educational attainment, macroeconomic policies and indicators of trade openness. Specifically, we control for the **average years of schooling** as indicator of the human capital stock in the economy, the **inflation rate** and the ratio of **government expenditure** to GDP as indicators of macroeconomic stability, and the sum of **exports and imports** as share of GDP to capture the degree of openness of an economy.

The coefficient β in regression equation (1) captures both the growth and the distributional effect of financial intermediary development on the income growth of the poorest income quintile. This regression set-up does not allow us to assess how much of the effect of Private Credit is due to its positive effect on overall GDP per capita growth and how much is due to distributional effects that changes incomes of the poorest income quintile relative to other income quintiles. To better understand the distributional effect of financial intermediary development, we do the following. First, following Dollar and Kraay (2002), we regress the growth rate of GDP per capita for the poorest quintile on real GDP per capita growth for the whole population and Private Credit.

$$(y_{i,p,t} - y_{i,p,t-n})/n = \alpha y_{i,p,t-n} + \beta(y_{i,t} - y_{i,t-n})/n + \gamma FD_i + \varepsilon_i, \qquad (2)$$

The coefficient β indicates whether the income of the poorest quintile grows proportionally with overall income growth in the economy, while γ indicates whether there is any differential effect of Private Credit on income growth of the poorest quintile beyond any impact on overall income growth. A positive (negative) γ indicates the poorest quintile benefits more (less) than proportionally from Private Credit.

Regression equation (2) assesses how the poorest quintile's income share varies with Private Credit. As alternative measures of distributional change, we examine the

relationship between financial intermediary development and (i) changes in the Gini coefficient and (ii) changes in the standard deviation of income distribution, which are more general measures of income distribution:

$$(G_{i,t} - G_{i,t-n})/n = \alpha(y_{i,t} - y_{i,t-n})/n + \beta FD_i + \lambda G_{i,t-n} + \varepsilon_i, \qquad (3)$$

where $G_{i,t}t$ is either the log of the Gini coefficient or the log of the standard deviation of the income distribution of country i in period t. As before, the time period *n* is at least 20 years. As in regression (2), we include the GDP per capita growth rate to (a) separate the distributional effect of Private Credit from the aggregate growth effect and (b) control for any effect that GDP per capita growth has on income distribution (Bourguignon, 2001).

To explore the impact of financial intermediary development on social improvements, specifically reductions in infant mortality and increases in primary net enrollment rates, we regress the log difference of these variables on their initial value, growth of GDP per capita and Private Credit

$$(S_{i,t} - S_{i,t-n})/n = \alpha(y_{i,t} - y_{i,t-n})/n + \beta FD_i + \lambda S_{i,t-n} + \varepsilon_i, \quad (4)$$

where $S_{i,t}$ is the log of the respective indicator in country i in year t. Again, by controlling for GDP per capita growth, we identify the distributional effect of Private Credit. Given the different frequency of the social indicators, the regressions are run over different time periods. In either case, however, *n* is at least 20 years. We also considered using indicators of absolute poverty such as headcount and poverty gap based on the one-dollar-a-day criterion. These are problematic, however, because time-series dimension of these data are extremely limited and because these headcount and poverty gap indicators measure extreme destitution, which also results in high and upper-middle income countries dropping out of the sample (Pritchett, 2003). Thus, we mainly focus on

measuring the growth rate of the incomes of the poorest quintile of society and changes in income distribution.

E. Simultaneity Bias

To assess the relationship between financial intermediary development and income distribution, we use both Ordinary Least Square (OLS) and Instrumental Variable (IV) regressions. The results of the OLS regressions might be biased due to reverse causation and simultaneity bias.[9] To assess the robustness of the results, we therefore use IV regressions and extract the exogenous component of financial intermediary development. Following the finance and growth literature, we use the legal origin of countries, the absolute value of the latitude of the capital city and the religious composition of the population as instrumental variables. Previous research has demonstrated the correlation of financial intermediary development with a country's legal tradition, initial endowment and dominant religion [La Porta et al. (1997), Beck, Demirguc-Kunt and Levine (2003) and Stulz and Williamson (2003)].

To test the appropriateness of the instruments, we use two tests. First, to test whether the instrumental variables are valid, we use the Hansen test of the overidentifying restrictions (OIR), which assesses whether the instrumental variables are associated with the dependent variable beyond their ability to explain cross-country variation in Private Credit. Under the joint null hypothesis that the excluded instruments (i.e., the instruments not included in the second stage regression) are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation, the Hansen test is distributed χ^2 in the number of

[9] Honohan (2004a,b), however, argues that reverse causation should be much less of a problem in the case of income growth of the poor than overall GDP per capita growth.

overidentifying restrictions. Second, we test for the joint significance of the instruments in the first stage regressions to assess whether the instruments explain variation in financial development.

IV. Empirical results

A. The distributional effect of finance

The results in Table 3 suggest that finance is pro-poor. Private Credit has a positive impact on the income growth of the poor, even after controlling for the overall income growth. This relationship is robust to controlling for a large number of other growth determinants and controlling for endogeneity. Consider first the results in columns 1 and 2. Here we regress the average annual growth rate of income of the poorest quintile on Private Credit and an array of conditioning information variables. These regressions are similar to regressions utilized in previous studies, but use income growth of the poorest income quintile rather than the overall income growth rate as the dependent variable. The results suggest that the income of the poorest quintile grows faster in countries with better-developed financial intermediaries. Using legal origin, latitude and religion to extract the exogenous component of Private Credit, the results in column 2 show that this relationship is not due to reverse causation or simultaneity bias. The specification tests do not reject the validity of the instruments; they jointly enter significantly in the first-stage regressions and the test of OIR is not rejected, indicating that the instrumental variables are not related to the income growth of the poor beyond their influence through financial intermediary development or the other explanatory variables.

Financial intermediary development benefits the poorest income quintile relatively more than the overall population, as indicated by the results in columns 3 and 4. While the results in columns 1 and 2 do not allow us to distinguish the growth effect of financial intermediary development (which has been established by previous studies) from the distributional effect, the regressions in columns 3 and 4 separate the growth and distributional effects. They do this by regressing the growth rate of the poorest income quintile on the overall GDP per capita growth rate and Private Credit. The coefficient on Private Credit thus captures any differential - distributional - effect of financial intermediary development on the poorest income quintile beyond its overall growth effect. The positive and significant coefficient indicates a distributional effect of Private Credit favoring the lowest income quintile. As indicated by the results in column 4, where we instrument for Private Credit with legal origin, latitude and religion, this result is also robust to controlling for endogeneity.[10]

The distributional effect of Private Credit is not only statistically significant but also economically relevant. Comparing the coefficients on Private Credit in columns 1 and 3 and columns 2 and 4 suggests that the distributional effect of Private Credit is more than half of the overall effect of Private Credit on the income growth of the poorest quintile. The results suggest that average income of the poor in Brazil would have grown 2% instead of 0% annually over the period 1960-99 if Brazil had the same level of

[10] As robustness test, we also tested whether the effect of financial intermediary development varies with the initial income of the poor. While the interaction term of Private Credit with the log of initial income enters negatively, it is not significant; and the overall effect of Private Credit is significant and positive at all levels of initial income of the poor. Furthermore, while the point estimate of the impact of Private Credit seems to decline with increases in initial income, we cannot reject the hypothesis that Private Credit has the same coefficient at different income levels.

financial intermediary development as Korea.[11] Given that Brazil's GDP per capita grew 2% over the same period, the poor would have experienced similar income growth as the rest of the country. The effect is even stronger for the IV regression.

Turning to the control variables, we note that Private Credit is the only variable entering significantly in both columns 1 and 2. We find a convergence effect in columns 3 and 4, the log of initial income of the poor enters significantly and negatively in both OLS and IV regressions. Growth of GDP per capita, on the other hand, enters significantly in the OLS, but not in the IV regression.

The results in Table 4 confirm the positive distributional effect of Private Credit. Here the dependent variable is either the change in the Gini coefficient or the change in the standard deviation of the income distribution. We regress these on both GDP per capita growth and Private Credit. Plus, in the change in Gini regression we include the initial Gini value; and in the change in the standard deviation of the income distribution regression, we include the initial standard deviation value. Private Credit enters significantly and negatively in all regressions.[12] Again, the relationship between the change in Gini (and the change in the standard deviation of income distribution) and Private Credit is robust to controlling for endogeneity; Private Credit enters significantly in the IV regressions and the OIR is not rejected.

Finally, we note that there is a convergence effect in income inequality. Higher initial inequality is associated with a decline in inequality in all regressions. We do not see any evidence of growth reducing income inequality, since growth of GDP per capita

[11] To get this, recall that the regressors are in logs and note that the ln(0.740) - ln(0.276) = 0.99. Multiplying this with the coefficient in column 3, yields 0.016.
[12] We also tested for non-linearities by including the squared term of Private Credit, but it never entered significantly.

does not enter significantly in most regressions.

The results in Tables 3 and 4 establish that financial intermediary development has a positive distributional effect with positive ramifications on poverty alleviation. Given the poverty-growth-inequality identity, the finding that financial development improves income distribution clearly indicates that finance is not only pro-growth, but also pro-poor.

B. The social effect of finance

Finally, as a robustness check, we assess the direct link between financial intermediary development and two social indicators. The goal is to use alternative indicators – besides income and inequality measures -- of whether the poor are benefiting from financial development. First and foremost we use infant mortality. The underlying assumption is that the poor will spend some of their increased prosperity on reducing the risk of infant mortality. The results in Table 5 indicate that financial deepening is associated with reductions in infant mortality. Private Credit enters significantly and negatively both in the OLS and the IV regressions of the growth in infant mortality. Further, the OIR test is not rejected suggesting that the association of Private Credit with reductions in infant mortality is not due to reverse causation. Second, we examine primary school enrollment rates. Here, the underlying assumption is that the poor will spend some of their increased prosperity on schooling for their children. This indicator is more suspect than infant mortality because (i) the link between income and saving one's children seems stronger than the link between income and sending one's children for formal education and (ii) public policies toward schooling will dramatically alter the availability of schools. While Private Credit enters significantly in the OLS regression of

the net primary enrollment rate, it does not enter significantly in the IV regression, suggesting that while net enrollment in primary schools has increased over the past 30 years in economies with stronger financial intermediaries, there is no robust evidence for a causal relationship.[13]

V. Conclusions

An extensive literature has already shown that financial development is pro-growth. Using a broad sample for 52 countries, with data averaged over the period 1960 to 1999, this paper assesses whether financial intermediary development is also pro-poor. To be classified as "pro-poor," we require that financial development not only exerts a positive impact on income distribution. In other words, financial development should either raise everyone's income equally or it should raise the incomes of the poor disproportionately more than the rich.

The results of this paper indicate that financial intermediary development is indeed pro-poor. Using credit by financial intermediaries to the private sector divided by GDP - a measure of financial intermediary development common in the finance and growth literature- we see that in countries with better developed financial intermediaries, the income of the lowest quintile grows faster than average GDP per capita and income inequality falls more rapidly. Since past work indicates that finance has a positive impact on long-run economic growth, this paper's additional finding that it also affects income distribution favorably establishes that financial development is pro-poor.

Our results show the importance of financial intermediaries for the poor, but they

[13] This a similar finding as in Easterly (1999) who fails to find a causal relationship between economic growth and many quality of life indicators.

do not suggest how to foster financial intermediary development or how to broaden access to financial services. A large and growing literature has discussed policies to foster financial intermediary development. But future work will need to identify which policies lead to pro-poor financial intermediary development that expands access to financial services and products.

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Table 1
Financial Development and Growth in Inequality and Social Indicators

GDP/CAP is real GDP per capita in US$. GR_POOR is the growth rate of the poor over the period 1960-1999. GINI COEFFICIENT is the growth in Gini coefficient over the period 1960-99. STANDARD DEVIATION is the growth in standard deviation of the income distribution averaged over the period 1960-99. PRIMARY ENROLMENT is the growth in net primary school enrolment averaged over 1960-99. INFANT MORTALITY is the growth in mortality rate for infants, per 1000 live births. PRIVATE CREDIT is claims of financial institutions on the private sector, as a share of GDP. Detailed variable definitions and sources are in the appendix.

NATION	GDP/CAP	GR_POOR	GINI COEFFICIENT	STANDARD DEVIATION	PRIMARY ENROLMENT	INFANT MORTALITY	PRIVATE CREDIT
Australia	15957	0.020	0.004	0.004	0.000	-0.035	0.395
Bahamas, The	11723	0.018	-0.008	-0.008	-0.009	-0.031	0.461
Bangladesh	267	0.015	0.002	0.002	0.020	-0.025	0.208
Bolivia	915	0.010	-0.005	-0.006	0.011	-0.022	0.194
Brazil	3411	0.003	0.007	0.009	0.011	-0.032	0.276
Canada	16549	0.020	0.004	0.004	0.003	-0.042	0.563
Chile	2885	0.011	0.005	0.005	0.000	-0.059	0.337
Colombia	1753	0.021	0.000	0.000	0.021	-0.035	0.234
Costa Rica	2747	-0.001	0.001	0.001	0.001	-0.047	0.208
Denmark	27157	0.027	0.002	0.002	0.002	-0.041	0.439
Dominican Republic	1201	-0.002	0.009	0.010	0.049	-0.022	0.203
Ecuador	9391	0.003	0.011	0.012	0.006	-0.036	0.206
Egypt, Arab Rep.	715	0.042	-0.010	-0.009	0.013	-0.041	0.266
El Salvador	1561	-0.012	0.001	0.001	0.007	-0.033	0.072
Finland	19636	0.057	-0.018	-0.019	0.002	-0.043	0.514
France	20433	0.044	-0.010	-0.010	0.001	-0.046	0.760
Germany	25399	0.018	0.000	0.000	0.005	-0.052	0.816
Greece	9104	0.022	0.003	0.003	0.000	-0.050	0.312
Guyana	823	-0.001	-0.006	-0.007	0.004	-0.015	0.336
Honduras	651	0.013	-0.003	-0.003	0.011	-0.036	0.252
Hong Kong, China	12311	0.052	0.005	0.006	0.001	-0.066	1.491
India	262	0.022	-0.004	-0.005	.	-0.019	0.197
Indonesia	550	0.044	-0.002	-0.002	0.010	-0.032	0.295
Jamaica	2126	0.015	-0.007	-0.008	0.001	-0.030	0.239

NATION	GDP/CAP	GR_POOR	GINI COEFFICIENT	STANDARD DEVIATION	PRIMARY ENROLMENT	INFANT MORTALITY	PRIVATE CREDIT
Japan	27798	0.055	-0.007	-0.007	0.001	-0.056	1.197
Korea, Rep.	5087	0.066	0.001	0.001	0.001	-0.071	0.740
Madagascar	319	-0.017	-0.002	-0.003	0.022	-0.007	0.162
Malaysia	2381	0.041	0.002	0.003	0.004	-0.056	0.574
Mexico	2773	0.012	0.002	0.002	0.008	-0.033	0.211
Netherlands	20499	0.035	-0.009	-0.009	0.002	-0.032	0.912
Niger	310	-0.013	0.007	0.008	0.000	-0.007	0.113
Nigeria	256	-0.005	0.003	0.003	.	-0.003	0.107
Norway	22932	0.052	-0.012	-0.012	0.005	-0.039	0.737
Pakistan	340	0.028	0.000	0.000	.	-0.012	0.214
Panama	2857	-0.023	0.010	0.012	0.009	-0.027	0.456
Peru	2300	0.001	-0.006	-0.007	0.010	-0.038	0.151
Philippines	994	0.016	0.004	0.004	0.002	-0.031	0.296
Portugal	7184	0.039	-0.006	-0.007	0.011	-0.066	0.686
Senegal	592	-0.005	0.002	0.003	0.027	-0.019	0.257
Sierra Leone	296	-0.077	0.006	0.008	.	-0.005	0.047
Singapore	11847	0.052	0.002	0.002	0.000	-0.062	0.780
Spain	10755	0.032	-0.004	-0.004	0.003	-0.061	0.798
Sri Lanka	487	0.034	-0.005	-0.006	.	-0.040	0.154
Sweden	22135	0.033	-0.009	-0.010	0.001	-0.041	0.909
Thailand	1347	0.031	0.004	0.005	.	-0.035	0.524
Trinidad and Tobago	3664	0.021	0.002	0.002	0.002	-0.032	0.305
Tunisia	1507	0.036	-0.002	-0.002	0.009	-0.047	0.591
Turkey	2256	0.029	-0.002	-0.002	0.001	-0.038	0.158
United Kingdom	14671	0.014	0.008	0.009	0.001	-0.035	0.567
United States	21202	0.011	0.009	0.010	0.002	-0.033	0.826
Venezuela	3845	0.001	0.003	0.003	0.003	-0.026	0.230
Zambia	575	-0.027	0.004	0.005	-0.008	-0.003	0.062

Table 2
Summary Statistics and Correlations

Panel A presents the descriptive statistics and Panel B presents the correlations. GR_GCAP is growth in real GDP per capita in US$. GR_POOR is the growth rate of the poor over 1960-1999. INFANT MORTALITY is the growth in mortality rate for infants, per 1000 live births. GINI COEFFICIENT is the growth in Gini coefficient over the period 1960-1999. PRIMARY ENROLMENT is the growth in net primary school enrolment over 1960-99. STANDARD DEVIATION is the growth in standard deviation of the income distribution over the period 1960-99. PRIVATE CREDIT is claims of financial institutions on the private sector, as a share of GDP. The descriptive statistics and correlations are calculated for growth rates in each of the variables, except PRIVATE CREDIT, which is the log of the average value over the period 1960-99. Detailed variable definitions and sources are in the appendix.

Panel A:

Variable	N	Mean	Standard Deviation	Minimum	Maximum
PRIVATE CREDIT	52	0.425	0.307	0.047	1.491
GR_POOR	52	0.018	0.025	-0.077	0.066
GINI COEFFICIENT	52	-0.000	0.006	-0.018	0.011
GR_GCAP	52	0.020	0.017	-0.021	0.067
INFANT MORTALITY	99	-0.031	0.017	-0.072	-0.003
PRIMARY ENROLMENT	65	0.007	0.011	-0.026	0.045
STANDARD DEVIATION	52	-0.000	0.007	-0.019	0.012

Panel B:

	PRIVATE CREDIT	GR_POOR	GINI COEFFICIENT	GR_GCAP	INFANT MORTALITY	PRIMARY ENROLMENT
GR_POOR	0.7275***					
GINI COEFFICIENT	-0.2347*	-0.4908***				
GR_GCAP	0.6689***	0.8051***	-0.0721			
INFANT MORTALITY	-0.7023***	-0.7189***	0.1855	-0.7852***		
PRIMARY ENROLMENT	-0.2606*	-0.2375	0.1395	-0.2177	0.3106***	
STANDARD DEVIATION	-0.2430*	-0.5000***	0.9970***	-0.0710	0.1910	0.1530

***, ** and * represent significance at 1, 5 and 10% level respectively.

Table 3
Finance and Income Growth of the Poor

Specifications (1) and (3) are OLS regressions while specifications (2) and (4) are IV regressions. In specification (1), the regression equation estimated is GR_POOR=α_0 + β_1 INITIAL VALUE + β_2 EXPEN +β_3 TRADE+ β_4INFLATION + β_5SCHOOL60 + β_6PRIVATE CREDIT. In specification (3), the regression equation estimated is GR_POOR =α_0 + β_1 GR_GCAP + β_2INITIAL VALUE + β_3PRIVATE CREDIT. GR_POOR is the growth rate of the poor. GR_GCAP is the growth rate of real GDP per capita. EXPEN is the general govt. final expenditure as a % of GDP. INFLATION is the log difference of the CPI. TRADE is share of exports and imports in GDP. SCHOOL60 is the secondary school attainment from the Barro-Lee dataset in the year 1960. INITIAL VALUE is the initial GDP per capita of the poor. PRIVATE CREDIT is claims of financial institutions on the private sector, as a share of GDP. Robust standard errors are reported in parentheses.

In specification (2) and (4), the first stage regression equation is PRIVATE CREDIT=α_0 + β_1 COMMON + β_2 FRENCH+β_3 GERMAN+ β_4LATITUDE+ β_5 CATHOLIC+β_6 MUSLIM+β_7 ORELIG. COMMON, FRENCH and GERMAN legal origin are dummies with value one for countries with the respective legal origin and zero otherwise. LATITUDE is the capital's latitude in absolute terms. CATHOLIC is percentage of Catholics. MUSLIM is the percentage of Muslims. ORELIG is percentage of other religions in the country. The second stage regression estimated in (2) is the same as the regression in (1) : GR_POOR=α_0 + β_1 INITIAL VALUE + β_2 EXPEN +β_3 TRADE+ β_4INFLATION + β_5SCHOOL60 + β_6 (predicted values of) PRIVATE CREDIT. Predicted values of PRIVATE CREDIT are used from the first stage. The second stage regression estimated in (4) is the same as the regression in (3) : GR_POOR =α_0 + β_1 GR_GCAP + β_2INITIAL VALUE + β_3 (predicted values of) PRIVATE CREDIT. Predicted values of PRIVATE CREDIT are used from the first stage. Log values of all right hand side variables are used. Specifications (2) and (4) also report the F-test for the instruments used, the OIR test and the adjusted R-squared from the first stage. The null hypothesis of the OIR test is that the instruments are not correlated with the residuals. Detailed variable definitions and sources are in the appendix.

	1	2	3	4
	GR_POOR	GR_POOR	GR_POOR	GR_POOR
Constant	0.130*	0.153*	0.043***	0.126*
	[0.075]	[0.084]	(0.016)	(0.065)
INITIAL VALUE	-0.007	-0.011**	-0.005**	-0.014*
	[0.004]	[0.005]	(0.002)	(0.008)
GR_GCAP			0.777***	0.253
			(0.119)	(0.416)
PRIVATE CREDIT	0.031***	0.044***	0.016***	0.038**
	[0.006]	[0.009]	(0.005)	(0.017)
EXPEN	-0.008	-0.008		
	[0.007]	[0.010]		
TRADE	-0.005	-0.005		
	[0.015]	[0.015]		
INFL	0.001	0.004		
	[0.003]	[0.004]		
SCHOOL60	0	-0.002		
	[0.004]	[0.005]		
F-Test		0.002		0.002
OIR Test		0.361		0.647
N	47	47	52	52
R-squared	0.59		0.726	
First Stage Adjusted R-squared		0.490		0.665

***, ** and * represent significance at 1, 5 and 10% level respectively

Table 4
Finance and Income Distribution

Specifications (1) and (3) are OLS regressions while specifications (2) and (4) are IV regressions. In specification (1) and (3), the regression equation estimated is GINI COEFFICIENT / STANDARD DEVIATION=α_0 + β_1 GR_GCAP + β_2INITIAL VALUE + β_3PRIVATE CREDIT. GINI COEFFICIENT is the growth in Gini coefficient over the period 1960-1999. STANDARD DEVIATION is the growth in standard deviation of the income distribution over the period 1960-99. GR_GCAP is the growth rate of real GDP per capita. INITIAL VALUE is initial value of the GINI coefficient or the initial value of the standard deviation. PRIVATE CREDIT is claims of financial institutions on the private sector, as a share of GDP. Robust standard errors are reported in parentheses.
In specification (2) and (4), the first stage regression equation is PRIVATE CREDIT=α_0 + β_1 COMMON + β_2 FRENCH+β_3 GERMAN+ β_4LATITUDE+ β_5 CATHOLIC+β_6 MUSLIM+β_7 ORELIG. COMMON, FRENCH and GERMAN legal origin are dummies with value one for countries with the respective legal origin and zero otherwise. LATITUDE is the capital's latitude in absolute terms. CATHOLIC is percentage of Catholics. MUSLIM is the percentage of Muslims. ORELIG is percentage of other religions in the country. The second stage regression estimated is the same as the regression in (1) and (3): GINI COEFFICIENT / STANDARD DEVIATION =α_0 + β_1 GR_GCAP + β_2INITIAL VALUE + β_3 (predicted values of) PRIVATE CREDIT. Predicted values of PRIVATE CREDIT are used from the first stage. Log values of all right hand side variables are used. Specifications (2) and (4) also report the F-test for the instruments used, the OIR test and the adjusted R-squared from the first stage. The null hypothesis of the OIR test is that the instruments are not correlated with the residuals. Detailed variable definitions and sources are in the appendix.

	1	2	3	4
	GINI COEFFICIENT	GINI COEFFICIENT	STANDARD DEVIATION	STANDARD DEVIATION
Constant	0.041***	0.051***	-0.010***	-0.021***
	(0.012)	(0.015)	[0.003]	[0.007]
INITIAL VALUE	-0.013***	-0.018***	-0.012***	-0.017***
	(0.003)	(0.005)	[0.003]	[0.005]
GR_GCAP	0.044	0.168*	0.052	0.188*
	(0.051)	(0.097)	[0.055]	[0.104]
PRIVATE CREDIT	-0.004***	-0.009***	-0.005***	-0.010***
	(0.001)	(0.003)	[0.002]	[0.003]
F-Test		0.002		0.002
OIR Test		0.123		0.159
N	52	52	52	52
R-squared	0.212		0.209	
First Stage Adjusted R-squared		0.586		0.586

***, ** and * represent significance at 1, 5 and 10% level respectively

Table 5
Finance and Social Improvements

Specification (1) and (3) are OLS regressions and specification (2) and (4) are IV regressions. In specifications (1) and (3), the regression equation estimated is SOCIAL $=\alpha_0 + \beta_1$ GR_GCAP + β_2 INITIAL VALUE+ β_3 PRIVATE CREDIT. The dependent variable in each panel is the growth rate in the respective indicators: INFANT MORTALITY is the mortality rate for infants, per 1000 live births. PRIMARY ENROLMENT is the percentage net primary school enrolment The regressors include the initial values of INFANT MORTALITY or PRIMARY ENROLMENT GR_GCAP which is the growth rate of GDP per capita and PRIVATE CREDIT, which is the claims of financial institutions on the private sector, as a share of GDP. Log values of all right hand side variables are used. Robust standard errors are reported in parentheses.

In specification (2) and (4), the first stage regression equation is PRIVATE CREDIT=$\alpha_0 + \beta_1$ COMMON + β_2 FRENCH+β_3 GERMAN+ β_4 LATITUDE+ β_5 CATHOLIC + β_6 MUSLIM + β_7 ORELIG. COMMON, FRENCH and GERMAN legal origin are dummies with value one for countries with the respective legal origin and zero otherwise. LATITUDE is the capital's latitude in absolute terms. CATHOLIC is percentage of Catholics. MUSLIM is the percentage of Muslims. ORELIG is percentage of other religions in the country. The second stage regression estimated is the same as the regression in (1) and (3): SOCIAL = $\alpha_0 + \beta_1$ GR_GCAP + β_2 INITIAL VALUE + β_3 (predicted values of) PRIVATE CREDIT. Predicted values of PRIVATE CREDIT are used from the first stage. Log values of all right hand side variables are used. Specifications (2) and (4) also report the F-test for the instruments used, the OIR test and the adjusted R-squared from the first stage. The null hypothesis of the OIR test is that the instruments are not correlated with the residuals. Robust standard errors are given in parentheses. Detailed variable definitions and sources are given in the appendix.

	1	2	3	4
	INFANT MORTALITY	INFANT MORTALITY	PRIMARY ENROLMENT	PRIMARY ENROLMENT
Constant	-0.046***	-0.034***	0.114***	0.110***
	[0.009]	[0.012]	[0.011]	[0.011]
GR_GCAP	-0.309**	-0.072	0.042	0.06
	[0.137]	[0.128]	[0.037]	[0.046]
INITIAL VALUE	0.002	-0.005	-0.024***	-0.024***
	[0.002]	[0.004]	[0.002]	[0.002]
PRIVATE CREDIT	-0.007**	-0.020***	0.003**	0.002
	[0.004]	[0.006]	[0.002]	[0.002]
F-Test		0		0
Overid		0.234		0.356
Observations	99	99	65	65
R-squared	0.526		0.796	0.791
First Stage Adjusted R-squared		0.579		0.414

***, ** and * represent significance at 1, 5 and 10% level respectively.

Appendix
Table A1. Levels of Income Inequality and Social Indicators

GDP/CAP is real GDP per capita in US$. GINI COEFFICIENT is the Gini coefficient averaged over the period 1960-99. STANDARD DEVIATION is the standard deviation of the income distribution averaged over the period 1960-99. PRIMARY ENROLMENT is the net primary school enrolment averaged over 1960-99. INFANT MORTALITY is the mortality rate for infants, per 1000 live births. PRIVATE CREDIT is claims of financial institutions on the private sector, as a share of GDP. Detailed variable definitions and sources are in the appendix.

Nation	GDP/CAP	GINI COEFFICIENT	STANDARD DEVIATION	PRIMARY ENROLMENT	INFANT MORTALITY	PRIVATE CREDIT
Algeria	1440	.	.	91.660	92.965	0.326
Argentina	6817	.	.	101.649	35.576	0.169
Australia	15957	36.597	0.586	97.131	12.260	0.395
Austria	21166	.	.	89.061	16.651	0.660
Bahamas,	11723	45.773	0.823	.	27.333	0.461
Bahrain	9294	.	.	92.797	.	0.443
Bangladesh	267	33.060	0.587	69.846	117.471	0.208
Barbados	5841	.	.	92.618	31.012	0.427
Belgium	20098	.	.	.	15.004	0.301
Belize	1845	.	.	.	51.118	0.408
Benin	356	.	.	.	131.753	0.095
Bolivia	915	47.520	0.872	88.125	112.529	0.194
Botswana	1691	.	.	82.044	75.847	0.129
Brazil	3411	58.015	1.037	83.606	72.694	0.276
Burkina	186	.	.	26.477	141.388	0.134
Burundi	166	.	.	.	125.318	0.077
Cameroon	663	.	.	.	111.329	0.190
Canada	16549	31.551	0.506	.	13.279	0.563
Central	407	.	.	54.978	135.424	0.069
Chad	239	.	.	.	138.482	0.074
Chile	2885	52.053	0.920	88.580	33.825	0.337
Colombia	1753	53.709	1.003	.	48.129	0.235
Congo,	274	.	.	53.549	140.129	0.002
Congo,	736	.	.	.	96.953	0.096
Costa Rica	2747	46.383	0.839	88.430	33.893	0.208
Cote D'vorie	862	.	.	.	131.753	0.279
Cyprus	8789	.	.	88.850	.	0.716
Denmark	27157	35.507	0.588	.	10.603	0.439
Dominican	1202	47.292	0.842	.	72.059	0.204
Ecuador	9391	42.160	0.770	91.228	65.541	0.207
Egypt,	715	38.000	0.734	85.841	116.894	0.266
El Salvador	1561	50.494	0.909	76.023	79.906	0.072
Fiji	2059	.	.	.	38.988	0.261
Finland	19636	29.947	0.546	.	8.142	0.514
France	20433	38.825	0.695	99.367	12.663	0.760
Gabon	4314	.	.	.	91.106	0.148
Gambia, The	352	.	.	51.590	.	0.163
Germany	25399	30.741	0.523	.	.	0.816
Ghana	399	.	.	.	92.753	0.051
Greece	9104	35.398	0.652	93.983	20.388	0.312
Guatemala	1319	.	.	65.113	90.659	0.141
Guyana	823	48.190	0.888	90.850	72.824	0.336

Haiti	491	.	.	.	127.106	0.085
Honduras	651	54.488	1.025	.	81.412	0.252
Hong Kong,China	12311	41.583	0.713	90.862	11.711	1.491
Iceland	20318	.	.	.	9.092	0.394
India	262	32.352	0.619	.	98.959	0.197
Indonesia	550	33.615	0.624	93.249	81.518	0.295
Iran, Islamic Rep.	1544	.	.	80.904	.	0.268
Ireland	11582	.	.	90.881	14.349	0.503
Israel	11184	.	.	.	16.920	0.433
Italy	13850	.	.	99.609	19.395	0.603
Jamaica	2126	42.252	0.832	93.812	33.082	0.240
Japan	27798	34.106	0.553	100.152	10.156	1.197
Jordan	1637	.	.	75.398	.	0.616
Kenya	296	.	.	81.322	84.471	0.248
Korea,	5087	33.437	0.558	96.861	29.412	0.740
Kuwait	21572	.	.	65.652	30.123	0.530
Lesotho	322	.	.	69.099	114.412	0.134
Liberia	620	.	.	.	167.459	0.102
Luxembourg	28084	.	.	87.062	14.165	0.850
Madagascar	319	47.763	0.897	.	104.153	0.162
Malawi	140	.	.	.	163.812	0.106
Malaysia	2381	49.484	0.871	96.306	31.358	0.574
Mali	267	.	.	26.074	.	0.132
Malta	4508	.	.	97.892	17.891	0.531
Mauritania	455	.	.	.	135.765	0.315
Mauritius	2755	.	.	92.902	.	0.284
Mexico	2773	53.977	0.987	99.692	58.259	0.211
Morocco	1050	.	.	63.648	92.506	0.246
Nepal	167	.	.	.	136.118	0.105
Netherlands	20499	29.317	0.554	96.229	9.810	0.912
New Zealand	14307	.	.	99.093	13.416	0.418
Nicaragua	691	.	.	74.270	83.753	0.279
Niger	311	40.200	0.618	.	191.071	0.114
Nigeria	256	42.983	0.878	.	116.929	0.107
Norway	22932	33.166	0.608	98.503	9.860	0.737
Oman	3767	.	.	63.716	77.812	0.309
Pakistan	340	32.245	0.611	.	108.024	0.214
Panama	2857	52.937	0.944	90.144	36.812	0.456
Papua	849	.	.	.	90.459	0.187
Paraguay	1485	.	.	90.736	45.059	0.161
Peru	2300	49.274	0.927	91.880	81.990	0.151
Philippines	994	47.378	0.833	96.802	64.894	0.296
Portugal	7184	36.353	0.671	96.623	32.790	0.686
Rwanda	268	.	.	.	119.894	0.058
Saudi Arabia	7578	.	.	55.039	80.212	0.459
Senegal	592	50.467	1.039	.	127.518	0.257
Sierra Leone	296	61.845	1.207	.	196.177	0.047
Singapore	11847	40.599	0.675	95.997	13.968	0.780
South	3989	.	.	92.326	66.082	0.501
Spain	10755	28.518	0.523	99.851	18.242	0.798
Sri Lanka	487	39.444	0.666	.	38.067	0.154
Sudan	234	.	.	.	90.588	0.092
Swaziland	1238	.	.	85.484	.	0.190

Sweden	22135	31.030	0.558	101.099	8.441	0.910
Switzerland	38324	.	.	.	10.866	1.259
Syrian	594	.	.	91.308	66.718	0.086
Thailand	1347	44.625	0.777	.	55.224	0.524
Togo	364	.	.	77.228	110.400	0.211
Trinidad	3664	44.529	0.777	91.008	33.689	0.305
Tunisia	1507	44.250	0.840	93.818	72.166	0.591
Turkey	2256	50.023	0.887	.	.	0.158
United Kingdom	14671	26.436	0.478	97.601	12.998	0.567
United States	21202	36.471	0.591	.	14.607	0.826
Uruguay	4865	.	.	.	31.071	0.237
Venezuela	3845	44.542	0.748	84.632	33.793	0.300
Zambia	576	47.702	0.907	.	108.024	0.062
Zimbabwe	596	.	.	.	73.729	0.233

Table A2: Variable Definitions

Variable	Variable Definition	Source
Dependent Variables		
GR_POOR	GDP per capita growth of the lowest income quintile group	WDI, Dollar and Kraay (2002)
GINI COEFFICIENT	Ratio of the area below the Lorenz Curve, which plots share of population against income share received, to the area below the diagonal. It lies between 0 and 1 and is a measure of income inequality.	Dollar and Kraay (2002)
STANDARD DEVIATION	Standard deviation of the income distribution. Assuming that the income distribution is lognormal, its standard deviation is given by $\sigma = (2)^{0.5} * \Phi^{-1}[(1+G/100)/2]$ where Φ denotes the cumulative normal distribution function	Dollar and Kraay (2002), Besley and Burgess(2003), own calculations
PRIMARY ENROLMENT	Net enrollment ratio is the ratio of the number of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age. Based on the International Standard Classification of Education, 1976 (ISCED76) and 1997 (ISCED97).	WDI
INFANT MORTALITY	Infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year.	WDI
Financial Structure and Macro Variables		
GDP/CAP	GDP per capita(constant 1995 US$)	WDI
GR_GCAP	GDP per capita growth(annual %)	WDI
PRIVATE CREDIT	Claims on private sector by deposit money banks and other financial institutions as share of GDP	IFS, own calculations
SCHOOL60	Secondary school attainment in the year 1960.	Barro-Lee dataset
EXPEN	General Government final consumption expenditure (% of GDP)	WDI
INFLATION	Inflation calculated from CPI	IFS
TRADE	Share of imports plus exports in GDP	WDI

Endowment Variables		
LATITUDE	The absolute value of the latitude of the country, scaled to take values between 0 and 1	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
Religion Variables		
CATHOLIC	Catholics as a percentage of population in 1980	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
MUSLIM	Muslims as a percentage of population in 19805	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
PROTEST	Protestants as a percentage of population in 1980	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
ORELIG	Other Religions as a percentage of population in 1980	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
Legal Origin Variables		
COMMON	Legal Origin - British	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
FRENCH	Legal origin – French	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
GERMAN	Legal origin – German	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
SCANDINAV	Legal origin – Scandinavian	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)
TRANSITION	Legal origin – Socialist	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1999)